AMENDMENTS TO THE CLAIMS

1. Claims 1-4. (Cancelled).

5. (Currently Amended) A method of making an optical fiber, which draws an optical fiber preform upon heating and coats thus drawn optical fiber with a resin; said method comprising the steps of:

drawing said optical fiber preform upon heating in an atmosphere constituted by a first gas having a predetermined thermal conductivity;

heating and annealing said drawn optical fiber in an atmosphere constituted by a second gas having a thermal conductivity lower than said predetermined thermal conductivity of said first gas;

coating said annealed optical fiber with said resin;

supplying said first gas into an upper portion of ~~said~~ a drawing furnace so that said first gas flows downward said drawing furnace; and

discharging said first gas from a first gas exit section disposed between said drawing furnace and ~~said~~ a heating furnace; and

discharging said second gas from said heating furnace so that said first gas and said second gas are not mixed in said drawing furnace.

6. (Original) A method of making an optical fiber according to claim 5, wherein a heating furnace disposed with a gap with respect to a drawing furnace for drawing said optical fiber preform upon heating is used so as to anneal said drawn optical fiber in said heating furnace.

7. (Original) A method of making an optical fiber according to claim 5, wherein He gas is used as said first gas; and

wherein one of N_2 gas, Ar gas, and air is used as said second gas.

8. (Original) A method of making an optical fiber according to claim 5, wherein employed as said heating furnace is a heating furnace having a muffle tube through which said drawn optical fiber passes, said muffle tube being disposed at a position where said drawn optical fiber has an entering temperature within the range of 1400 to 1800°C with respect to said muffle tube; and

wherein said drawn optical fiber is annealed in said heating furnace.

9. (Currently Amended) A method of making an optical fiber according to claim 6, ~~which draws an optical fiber preform upon heating; said method comprising the steps of~~ wherein

~~using a drawing furnace for drawing said optical fiber preform in an atmosphere constituted by a first gas and a heating furnace, disposed with a gap with respect to said drawing furnace, for heating and annealing in an atmosphere constituted by a second gas said optical fiber drawn by said drawing furnace~~;

~~forming~~ said gap is formed ~~between said drawing furnace and said heating furnace~~ into a gas mixture layer in which said first and second gases exist in a mixed state;

the method comprising: feeding said optical fiber drawn by said drawing furnace to said heating furnace by way of said gas mixture layer; and

heating said drawn optical fiber in said heating furnace such that said optical fiber has a temperature within the range of 1200 to 1700°C.

10. (Original) A method of making an optical fiber according to claim 9, wherein a barrier for separating said gas mixture layer from the outside air is provided,

said barrier being formed with a gas exit section for letting out at least said first gas.

11. (Cancelled).

12. (Original) A method of making an optical fiber according to claim 9, wherein said drawn optical fiber has an entering temperature within the range of 1400 to 1900°C with respect to said gas mixture layer.

13. (Cancelled).